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Cooperative ECONOMIC INSECT REPORT

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PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 13 October 18, 1963 Number 42

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

FALL ARMYWORM larval activity increased on alfalfa in Graham County, Arizona, and populations continue damaging to pastures and small grains in areas of Texas; also damaging winter wheat in southwest Kansas. ALFALFA CATERPILLAR populations heavy in alfalfa in areas of California, Arizona and Oklahoma. (p. 1237). PEA APHID serious on alfalfa in areas of Ohio and increased noticeably in areas of Wisconsin. SPOTTED ALFALFA APHID moderate to heavy on seedling alfalfa in Payne and Garfield Counties, Oklahoma, but reproduction occurring and serious damage could result; counts as high as 19 per single leaflet on seedling alfalfa in central Kansas; increased noticeably in Wisconsin and now more widely distributed. (p. 1238).

TARNISHED PLANT BUG populations light to heavy (6-15 per 10 sweeps) on alfalfa in north central and northwest Oklahoma, and ALFALFA WEEVIL adults averaged 33 per 100 sweeps on same crop in areas of Wyoming. GRASSHOPPER adult surveys in Idaho indicate 945,000 acres of rangeland and 88,600 acres of cropland presently infested, despite control programs. (p. 1239). HESSIAN FLY infestation ranged 0-30 percent on early planted wheat in north central Kansas. (p. 1240).

TEXAS CITRUS MITE on Florida citrus higher than in September of prior years and increasing; scattered, heavy infestations may be expected. PURPLE SCALE, GLOVER SCALE and CHAFF SCALE more widespread and infestations heavier than in recent years, and YELLOW SCALE more abundant than in any prior year on record, with further increase expected. (p. 1241).

BEET LEAFHOPPER apparently will be present in large numbers in Hagerman-Glenns Ferry area of Idaho during the fall; host plants abundant and in vigorous condition. (p. 1242). Single PINK BOLLWORM male moth caught in sex trap October 4 in stub cotton in Maricopa County, Arizona; larval infestation heavy in many cotton fields surveyed in Graham County. (p. 1243). VARIABLE OAK LEAF CATERPILLAR locally severe in areas of Kansas, with severe defoliation noted. (p. 1244).

DETECTION

A FLEAHOPPER (Spanogonicus albofasciatus) found for first time in Arkansas. (p. 1243). New county records include EUROPEAN CORN BORER in Warren County, Georgia (p. 1237); PINK BOLLWORM in Chicot County, Arkansas (p. 1243); ELM LEAF BEETLE in Riley, Linn and Miami Counties, Kansas (p. 1245); and A WEEVIL (Trachyphloeus bifoveolatus) in Skamania County, Washington (p. 1248).

CORRECTIONS

See page 1249.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1247). Reporting period September 29 - October 5 reflects highest incidence found during any 7-day period this calender year; majority of cases in Texas being found in and near the over-wintering area of a relatively mild winter.

1962 Wisconsin Insect Loss Estimates. (pp. 1253-1254).

Estimated Losses and Production Costs Attributed to Insects and Related Arthropods Attacking Grain Sorghum, Wheat and Cotton in Texas in 1962. (pp. 1255-1257).

Reports in this issue are for week ending October 11, unless otherwise indicated.

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WEATHER OF THE WEEK ENDING OCTOBER 14

Clear skies, abundant sunshine, warm days, cool nights, low humidity, and little or no rain described the weather over most of the Nation for week ending October 14. Agriculturalists agreed that it was ideal weather for maturing of late crops and harvest operations, but fine weather created problems in some areas. Some fields became too dry for fall plowing and, especially in New York and New England, the fields and woods became so dry that the fire hazard was serious. In fact, numerous forest fires occurred in those areas. Afternoon temperatures on Monday reached or exceeded 90° over the sandy Southwest, from Texas to Illinois, at Detroit, Michigan, and over southern New England. Numerous stations in those areas registered higher maximum temperatures than had previously occurred in October. On Tuesday, the hot southwesterly flow gave way to an invasion of cooler air which advanced over the northern half of the country. The temperature at Detroit rose to 68° on Tuesday. It had reached 92° the previous afternoon. Boston registered 90° on Monday, 72° on Tuesday. On Wednesday morning, temperatures dropped into the 20's in some spots in New England, and at a few locations in New York, Pennsylvania, and West Virginia. The cooling was especially noticeable in New England. A few stations set new high temperature records on October 7 and new low temperature records 3 days later. Chester, Massachusetts, registered 94° Monday afternoon and 23° on Thursday. Temperatures over the midsection of the Nation continued hot. Fort Smith and Little Rock, Arkansas, registered 96° on Thursday. This equaled Ft. Smith's previous record and set a new record at Little Rock. The temperature at Kansas City, Missouri, climbed to 97° on Thursday. It was the fourth occurrence of 90° temperatures in the first 10 days of October. The long time average is only one 90° maximum in October at Kansas City.

About midweek, a low pressure area developed in the middle Plains. It moved quickly to the Lake Region producing only patchy cloudiness and a few light showers of little importance. Under bright skies, hot afternoon temperatures continued over the Nation's middle. Maximum temperature readings of long standing were replaced by higher readings. A deep low off the upper Pacific coast brought cloudiness and some general rains to northern and central coastal areas. Red Bluff, California, received over an inch of rain and Tatoosh Island, Washington, received more than 3 inches. Light showers dotted southern Florida. High afternoon temperatures returned daily over the southern Plains, especially over eastern Texas, eastern Oklahoma, Arkansas, Louisiana, and Mississippi. In contrast, snow began falling Saturday afternoon at higher elevations in Nevada, Utah, and California. Snow accumulated to 5 inches at Austin, Nevada. On Sunday, temperatures dropped to below freezing above 6,000 feet in northern, central, and eastern sections of Arizona and above 7,000 feet in the southeastern mountains of Arizona. A few thunderstorms developed over southern Florida and a funnel cloud was seen near Key West. Some hail fell in northeastern Georgia. Precipitation was extremely light during the week. Wide areas from southern California to the southern Atlantic coast and from eastern Nebraska to the Gulf of Mexico received no rain. Another area of no precipitation or only light sprinkles extended from northern Minnesota eastward to the Atlantic. A third dry area included eastern Montana and nearby portions of Wyoming and the Dakotas. A few locations received more than an inch. In general, they were the northern Pacific coast, the southeastern coast of Florida, and the extreme northeastern portion of Maine.

Temperatures averaged below normal over the interior valleys of California, on the western slope of the middle Appalachians, along the (continued on page 1250)

CEREAL AND FORAGE INSECTS

FALL ARMYWORM (Laphygma frugiperda) - ARIZONA - Increase of larval activity found in Graham County alfalfa; 40-60 per 100 sweeps. (Ariz. Coop. Sur.). TEXAS - Light to heavy populations continue to damage pastures and small grains in various parts of State. Several fields of wheat completely destroyed in Hartley County. (Tex. Coop. Rpt.). KANSAS - Damaging winter wheat in Ford and Gray Counties, southwest; counts of 3-5 larvae per linear foot of row reported. Some application of controls anticipated. (DePew, Sept. 23). ALABAMA - Medium infestation on soybeans in Baldwin County and grasses in Lee, Macon and Russell Counties. Numerous adults in flight in Baldwin County. (Fairley, Smallwood). GEORGIA - Moderate infestation on foliage of soybeans in Grady County. (Barrett).

CORN EARWORM (Heliothis zea) - CALIFORNIA - Larvae medium on milo in Visalia, Tulare County. (Cal. Coop. Rpt.). ARIZONA - Present in sorghum fields in Graham, Yuma and Maricopa Counties; averaged 60 per 100 sweeps. (Ariz. Coop. Sur.). COLORADO - Causing some feeding damage to sorghum heads in Baca County. (Hantsbarger). MICHIGAN - Larval injury to field corn in Washtenaw, Livingston, Jackson and Ingham Counties very light during 1963 season. Only 3 ears, from 2 Livingston County fields, showed slight injury of a 520-ear sample taken from 19 fields. Second and third larval stages found October 9. (Dowdy). DELAWARE - Adult collections in blacklight trap in Sussex County greatly reduced; averaged 3 per night October 2-8. (Burbutis). GEORGIA - Light infestation in heads of grain sorghum in Barrow County. (Johnson). ALABAMA - Extremely light on late sorghum in Russell County field. (McQueen).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NORTH DAKOTA - Fall survey conducted in southeast area; included Cass, Traill, Richland, Ransom and Sargent Counties. Averages for area surveyed were as follows: Precent plants infested 95.31 (ranged 72-100); borers per infested plant 3.99 (ranged 0-14); borers per 100 plants 391.49 (ranged 0-1,400). Comparable figures for 1962, respectively, were as follows: 79 (range 40-100); 3.74 (range 0-17); and 285 (range 0-1,700). (N. D. Ins. Sur.). MINNESOTA - Stalk breakage of corn in west central district reported; 30 percent of stalks broken above ear, 9 percent below ear and less than 1 percent of ears on ground; latter figure expected to increase before corn harvest because of high larval numbers found in shank. (Minn. Ins. Rpt., Oct. 5). MIGHIGAN - Survey of Washtenaw, Livingston, Ingham and Jackson Counties October 8-9 revealed a relatively low level of larval injury to field corn in south central part of Lower Peninsula for 1963. In 19 fields checked, percent of plants infested ranged 0-52 percent (averaged 26 percent). Number of borers averaged about 1.2 per infested plant. Empty holes and holes containing fifth-stage larvae found most frequently. Holes with third and fourth-stage larvae found occasionally, but only one second-stage larva found. (Dowdy). GEORGIA - Moderate infestation in corn in Warren County; a new county record. (Brightwell).

SOUTHWESTERN CORN BORER (Zeadiatraea grandiosella) - MISSOURI - Survey in southeast complete; percent girdled corn stalks by county 20.2 in Butler, 31.6 in Dunklin, 2 in Mississippi, 40.6 in New Madrid, 52.4 in Pemiscot, 2.2 in Scott and 34.6 in Stoddard. No economic infestation found in Wayne County (reported as new county in CEIR 13(41):1206). (Munson, Thomas, Wood). KANSAS - Infestation of corn plants in a research plot in Stafford County, south central area, was 21 percent. (Painter).

SUGARCANE BORER (Diatraea saccharalis) - TEXAS - Heavy local infestations reported on grain sorghum in Brazoria County. (Teetes).

ALFALFA CATERPILLAR (Colias eurytheme) - CALIFORNIA - Heavy populations on alfalfa in Laton, Fresno County. (Cal. Coop. Rpt.). ARIZONA - Larvae continue high on alfalfa in Yuma, Graham and Maricopa Counties; 200-300 per 100 sweeps. (Ariz. Coop. Sur.). OKLAHOMA - Heavy populations reported on alfalfa in Bryan County, south central area; none observed in north central and northwest area fields. (Okla. Coop. Sur.). OHIO - Larvae 5 per 50 sweeps near Cincinnati, Hamilton County; many adults flying throughout alfalfafield. (Lyon).

BEET WEBWORM (Loxostege sticticalis) - COLORADO - Caused considerable damage to late cutting alfalfa in northern Elbert County; losses of up to one-third of hay crop estimated by one rancher. (Hantsbarger).

SORGHUM WEBWORM (Celama sorghiella) - ALABAMA - Light on late grain sorghum in Russell County field. (McQueen).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - Heavy numbers continue to appear on soybeans and cotton in Baldwin County. (Fairley, Smallwood).

SUNFLOWER MOTH (Homoeosoma electellum) - CALIFORNIA - Medium populations in seeds in sunflower heads in Isleton, Sacramento County. (Cal. Coop. Rpt.).

CUTWORMS - TEXAS - Medium to heavy infestations on wheat in Hartley County. (Dysart).

PEA APHID (Acyrthosiphon pisum) - WASHINGTON - Apterae rather numerous on alfalfa stubble after third cutting in Walla Walla, Walla Walla County. (Landis). NEVADA - Only trace numbers found in alfalfa in Lovelock area, Pershing County. (Lauderdale). COLORADO - Light on alfalfa on Western Slope; ranged 50-100 per 100 sweeps. (Bulla). NEBRASKA - Ranged 15-80 per 10 sweeps in central and eastern areas; 100 per 10 sweeps present in Howard County. (Calkins). WISCONSIN - Increased noticeably; ranged 30-1,000 per sweep in Green, Sauk and western Dane Counties in alfalfa. Predation and parasitism light in most fields, with few lacewing larvae, lady beetle adults and larvae, and Nabis ferus being only predators of consequence. (Wis. Ins. Sur.). OHIO - Serious damage occurring on alfalfa in Wayne County, northeast; ranged 200-500 per plant. (Treece). Heavy in most southwest, central and west central area alfalfa. (Lyon). Seriously infesting alfalfa in Muskinghum County, east central area. (Knotts). Serious on alfalfa in Franklin County, central area. (Holdsworth). Infesting alfalfa in Knox County, central area. (Dean). DELAWARE - Common to fairly abundant on alfalfa in several areas of State. (McCreary, Burbutis).

SPOTTED ALFALFA APHID (Therioaphis maculata) - IDAHO - Began appearing generally in many alfalfa fields throughout Elmore County during September. Some fields now described as heavily infested. Unseasonably warm weather this fall in southern part of State possibly reason for rapid buildup. (Edwards). NEVADA - None found in Pershing County alfalfa fields. (Lauderdale). COLORADO - Light on alfalfa on Western Slope; ranged 10-50 per 100 sweeps. (Bulla). OKLAHOMA - Moderate to heavy infestation noted on seedling alfalfa in Payne and Garfield Counties; ranged 25-75 per linear foot of row, but reproduction of aphids occurring and serious damage could result. Populations on established stands ranged 25-40 per 10 sweeps in Major County, 175-500 per 10 sweeps in Perkins area of Payne County and averaged 1,500 per 10 sweeps in Pauls Valley area. (Okla. Coop. Sur.). KANSAS - Counts on seedling alfalfa in north central area ranged from less than one to 19 per single leaflet. Counts on established alfalfa in same area ranged from less than one to 30 per sweep. Damage noted only in heavier infested seedling fields. (Peters). NEBRASKA - Counts per 10 sweeps averaged 8 in Butler County and 6 in Platte County. (Bergman). Sexual forms first recovered this year in Greeley County. (Calkins). WISCONSIN - Increased noticeably; now more widely distributed. In alfalfa field near Broadhead where populations ranged 5-10 per sweep September 3, numbers now 300 per sweep. Individual aphids present on upper leaves; some honeydew evident. Plants wilting and showing considerable leaf drop. Ranged 2-12 per sweep in Spring Green and Mazomanie areas. Populations in these fields first week of September very light (1 per 10 sweeps). Specimens can be found in few alfalfa fields in northern Green County where soil types heavier and stands denser. (Wis. Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - MICHIGAN - Populations generally low in south central area corn fields. Cast skins and other evidence indicates general moderate to heavy infestations earlier. (Dowdy). WISCONSIN - Averaged 1 nymph per 10 sweeps in grain fields at Spring Green; present in grain in southern Dane

County. (Wis. Ins. Sur.). NORTH DAKOTA - Populations low (trace to 100 per plant), but still active on late corn in southeast. Lady beetles present and active. (N. D. Ins. Sur.). OKLAHOMA - First activity of season on small grains noted in McClain County; 1.5 per linear foot of row. (Okla. Coop. Sur.). ALABAMA - Light on late sorghum in Russell County field, but appears to be building up. (McQueen).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - CALIFORNIA - Medium on corn in Visalia, Tulare County. (Cal. Coop. Rpt.). WASHINGTON - Counts 0-30 per plant on fall-planted wheat in Toppenish, Yakima County. Also attacking late oats in milk stage. Twenty-acre infested wheatfield does not look thrifty. (Landis).

ENGLISH GRAIN APHID (Macrosiphum avenae) - WISCONSIN - Nymphs and alates ranged 10-15 per 10 sweeps in field of grain in southern Dane County; averaged 0.5 per sweep in Spring Green area. (Wis. Ins. Sur.).

LYGUS BUGS (Lygus spp.) - NEVADA - Populations very low in all alfalfa checked in Lovelock area, Pershing County. (Lauderdale). COLORADO - Nymphs and adults up to 200-300 per 100 sweeps in Garfield County. (Bulla). OKLAHOMA - Light to heavy populations of Lygus lineolaris noted on alfalfa in north central and northwest areas; 6-15 per 10 sweeps. (Okla. Coop. Sur.).

A FALSE CHINCH BUG (Nysius raphanus) - CALIFORNIA - Heavy on milo plantings in Isleton, Sacramento County. (Cal. Coop. Rpt.).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - ARIZONA - Populations remain high in alfalfa in Graham and Maricopa Counties; averaged 3,000 per 100 sweeps. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (Hypera postica) - WYOMING - Adults averaged 33 per 100 sweeps in alfalfa in Fremont, Hot Springs, Washakie and Big Horn Counties. (Marks).

CLOVER ROOT CURCULIO (Sitona hispidula) - WISCONSIN - Adults common, as high as 4 per sweep, in most southern area alfalfa fields. (Wis. Ins. Sur.).

CORN ROOTWORMS (Diabrotica spp.) - NEBRASKA - D. virgifera and D. undecimpunctata howardi adults present on alfalfa, sorghum and weedy fields in central and eastern areas. (Bergman).

WHITE-FRINGED BEETLES (Graphognathus spp.) - GEORGIA - Light infestation feeding on weeds in city of Bainbridge, Decatur County. (Chesire). FLORIDA - G. peregrinus found lightly infesting native clover at Youngstown, Bay County. (Tipton, Breidenbach; Sept. 24).

A MORDELLID BEETLE - NORTH DAKOTA - Larvae working in sunflower stalks in southeast. Some stalk breakage appears to be due to larval feeding. (N. D. Ins. Sur.).

GRASSHOPPERS - IDAHO - Grasshopper populations in desert areas decreasing as egg laying tapers off. In many areas, populations now 1-5 per square yard where recently ranged 15-20 per square yard. Control accomplished during summer of 1963 on total of 277,626 acres. Despite control programs, adult surveys indicate 945,000 acres of rangeland and 88,600 acres of cropland presently infested. (Evans). OKLAHOMA - Very light, scattered damage noted along field margins of small grain fields in Payne, Logan, Kingfisher, Blaine, Major, Garfield and Noble Counties. Light damage to seedling alfalfa noted in Payne County and moderate damage to alfalfa reported from Blaine County. (Okla. Coop. Sur.). WISCONSIN - Primarily Melanoplus femurrubrum and secondarily M. differentialis increased in some alfalfa fields and decreased in other fields. Egg development continues; 50-80 percent of females contained eggs in southern counties. Egg pods in alfalfa fields difficult to find. Diseased grasshoppers averaged about one per yard in one Green County alfalfafield. (Wis. Ins. Sur.). OHIO - Melanoplus differentialis populations decreasing rapidly in southwest; nematode parasitism prevalent near Washington Court House, Fayette County. (Lyon).

HESSIAN FLY (Phytophaga destructor) - KANSAS - Infestation of early planted wheat in north central area ranges 0-30 percent. Larvae range 1-7 per plant; most less than one-half grown. (Peters). OHIO - Late instars observed on volunteer wheat near Hamilton, Butler County; no larvae observed in regular drilled autumn wheat. (Lyon).

SORGHUM MIDGE (Contarinia sorghicola) - CALIFORNIA - Heavy on milo in Visalia, Tulare County. (Cal. Coop. Rpt.). TEXAS - Severe localized damage reported on second-growth grain sorghum in Brazoria County. (Teetes).

A LEAF MINER (Liriomyza sp.) - CALIFORNIA - Medium in alfalfa leaves in Visalia, Tulare County. (Cal. Coop. Rpt.).

FRUIT INSECTS

APPLE MAGGOT (Rhagoletis pomonella) - MICHIGAN - Survey on October 10 revealed no adults on Eley crab apple on Michigan State University campus. This is first week since September 11, when first noticed, that adults of strain attacking this fruit not readily observed. Larvae numerous in fruits on trees and on ground. (Dowdy). OHIO - Infestations noted in some commercial apple orchards more than usual this year. Approximately 50 percent of apples, Wealthy and Northern Spy varieties, injured in 5-acre commercial block in Wayne County, northeast area. However, some apple orchards having potential for injury did not receive economic infestations. (Forsythe).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Abundant on fruit trees on Western Slope orchards. Major portion of population now in overwintering form. (Bulla). KANSAS - Heavy on apples in Riley County, northeast; moving into crevices of bark on trunks to hibernate. Some apple drop occurred. (Eshbaugh, Thompson; Sept. 27).

EUROPEAN RED MITE (Panonychus ulmi) - OHIO - Small numbers of eggs observed on treated apple trees (Red Delicious) near Dayton, Montgomery County; ranged 20-25 eggs per twig. (Meyer).

CODLING MOTH (Carpocapsa pomonella) - COLORADO - Injury to harvested peaches and apples ranging from 1 to 10 percent in Mesa and Montrose Counties; little injury noted on apples in Delta County. (Bulla).

PEAR-SLUG (Caliroa cerasi) - WASHINGTON - Larvae skeletonizing young pear trees near Royal Camp, Othello, Grant County. (Landis).

GREEN PEACH APHID (Myzus persicae) - COLORADO - Alates returning to peach orchards in Mesa County from summer host plants; some nymphs of egg-laying forms present on leaves. (Bulla).

BLACK CHERRY APHID (Myzus cerasi) - COLORADO - Noted on sour cherry trees in Mesa County; some egg-laying forms present. (Bulla).

WALNUT HUSK FLY (Rhagoletis completa) - CALIFORNIA - Larvae heavy in walnut husks in Redwood City, San Mateo County, and adults heavy in traps in Placerville, El Dorado County. (Cal. Coop. Rpt.). WASHINGTON - Infesting backyard walnuts at Pasco, Franklin County. (Hokenson, Telford). UTAH - Infesting large percentage of black walnuts at Providence, Cache County; most larvae left husks. (Hanson, Knowlton).

HICKORY SHUCKWORM (Laspeyresia caryana) - ALABAMA - Numerous, large larvae in hickory nuts and pecans in Dallas and Lee Counties. (McGlohon et al.).

HICKORY HORNED DEVIL (Citheronia regalis) - GEORGIA - Light numbers feeding on foliage of pecans in Bibb County. (Bumgardner, Oct. 4).

TWIG GIRDLER (Oncideres cingulata) - FLORIDA - Infesting stem of Japanese persimmon at Bonita Springs, Lee County. (Walsh, Shirah; Oct. 2).

MEXICAN FRUIT FLY (Anastrepha ludens) - ARIZONA - Female trapped in McPhail trap in Nogales, Santa Cruz County, on October 3; this is sixth fly trapped in State this year. Larval inspections made in fall fruit continue negative. (Ariz. Coop. Sur.; PPC).

BLACK CITRUS APHID (Toxoptera aurantii) - CALIFORNIA - Nymphs and adults heavy on citrus trees in Woodland, Yolo County; infestations slightly out of season. (Cal. Coop. Rpt.).

COCCIDS - CALIFORNIA - Coccus hesperidum and Icerya purchasi medium on lemon in Merced, Merced County. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Medium populations skeletonizing citrus leaves in Rancho Santa Fe, San Diego County. (Cal. Coop. Rpt.).

A PINK CITRUS RUST MITE (Aculus pelekassi) - FLORIDA - Moderate on leaves of orange at Groveland, Lake County, in October (Henderson, Brown, Fatic); and at Fort Lonesome, Hillsborough County (Custead, Oct. 7); light on leaves of Citrus sp. at Brooksville, Hernando County (Sellers, Sept. 16).

CITRUS RED MITE (Panonychus citri) - CALIFORNIA - Medium on citrus nursery stock in Woodland, Yolo County. (Cal. Coop. Rpt.).

A MITE (Agistemus fleschneri) - FLORIDA - Found infesting lemon at Apopka, Orange County. (Musgrove, Sept. 27).

Citrus Insect Situation in Florida - End of September - On leaves, CITRUS RUST MITE (Phyllocoptruta oleivora) infested 61 percent of groves (norm 59 percent); 43 percent economic (norm 37 percent). On fruit, CITRUS RUST MITE infested 68 percent of groves (norm 70); 44 percent economic (norm 46 percent). Population dropped into moderate range and now average for time of year. Upward trend will start in mid-October. Highest districts Gainesville, Brooksville, Bartow and west coast. CITRUS RED MITE (Panonychus citri) infested 43 percent of groves (norm 40 percent); 16 percent economic (norm 19 percent). Population slightly below average level and will remain in low range. Highest districts west coast and Brooksville. TEXAS CITRUS MITE (Eutetranychus banksi) infested 33 percent of groves (norm 15 percent); 19 percent economic (norm 4 percent). Population higher than in September of prior years and increasing. Scattered, heavy infestations may be expected. Highest districts Gainesville, west coast and ridge. PURPLE SCALE (Lepidosaphes beckii) infested 68 percent of groves (norm 56 percent); 14 percent economic (norm 2 percent). GLOVER SCALE (L. gloverii) infested 61 percent of groves (norm 25 percent); 21 percent economic (norm 1 percent). CHAFF SCALE (Parlatoria pergandii) infested 66 percent of groves (norm 39 percent); 14 percent economic (norm 1 percent). Latter 3 species are more widespread and infestations heavier than in recent years. Although scale populations are increasing, proportion of parasitized scales also increasing. YELLOW SCALE (Aonidiella citrina) infested 34 percent of groves (norm 9 percent); 6 percent economic (norm 1 percent). A. citrina is more abundant than in any prior year on record and further increase is expected. BLACK SCALE (Saissetia oleae) infested 49 percent of groves (norm 31 percent); 21 percent economic (norm 10 percent). Although population above normal for September, decrease to low level will occur in late October. Highest districts ridge and Indian River. WHITEFLY populations increased far above September normal. Rapid decrease expected in late October. GRASSHOPPERS continue above normal abundance. STINK BUGS are near average and less abundant than in 1962. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

Quarterly Citrus Insect and Mite Outlook in Florida - October through December
This outlook is based on the assumption that weather beyond the period of the current U.S. Weather Bureau's 30-day outlook will be normal. Therefore, the forecasts given below cannot be viewed with the same degree of confidence as those in the "Insect Situation in Florida" usually given twice each month.

Effects of the December 1962 freeze on tree condition and on pest populations are diminishing but still evident. MITES were more abundant in cold-damaged groves July through September. SCALES, MEALYBUGS and WHITEFLIES were less numerous in in cold-damaged groves. Much of the increase reported for scales in State due to buildup from abnormally low post-freeze levels to average pre-freeze levels in these cold-damaged groves.

CITRUS RUST MITE will continue at high level in cold-injured groves. Trend will be upward in most groves through November and will be more noticeable on fruit than on leaves. TEXAS CITRUS MITE will remain above average and will gradually increase until mid-December. Moderate to heavy infestations expected in 25 percent of groves; majority will be in cold-damaged groves. CITRUS RED MITE populations will be near average. Upward trend in late October will cause scattered infestations, mostly in cold-damaged groves. PURPLE SCALE, GLOVER SCALE, CHAFF SCALE and YELLOW SCALE will continue at above average level and will gradually increase. Although majority of groves will have light infestations, about 20 percent will develop heavy infestations of one or more of these scale species. These are expected to be spotty infestations in the inner canopy of trees. BLACK SCALE will remain above average with a decrease to low level expected in November. *Unaspis citri* and *Pinnaspis strachani* will increase in scattered groves now infested. GRASSHOPPERS and PLANT BUGS will be occasional problems. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

TRUCK CROP INSECTS

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Continues damaging in Yuma, Pima and Maricopa Counties; averaged 80 per 100 sweeps in lettuce fields. (Ariz. Coop. Sur.). GEORGIA - Light to moderate on commercial cabbage in Gwinnett County. (Woodliff). FLORIDA - Infesting 30 percent of 200 cabbage plants at Sanford, Seminole County. (Desin).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Light on lettuce in Yuma County but appears to be increasing in Maricopa County. (Ariz. Coop. Sur.).

WESTERN YELLOW-STRIPED ARMYWORM (*Prodenia praefica*) - CALIFORNIA - This species and beet armyworm (*Spodoptera exigua*) medium, spotty on green onions in Soledad, Monterey County. (Cal. Coop. Rpt.).

GARDEN WEBWORM (*Loxostege similalis*) - ARIZONA - Moderate infestations found on lettuce in Maricopa County; averaged 40 larvae per 100 sweeps. (Ariz. Coop. Sur.). ALABAMA - Heavy populations ruined most older turnips in some isolated home gardens in Lee, Russell and Macon Counties. (McQueen).

BEET LEAFHOPPER (*Circulifer tenellus*) - IDAHO - Populations extremely light during summer in southern part of State, but fall buildups large on Russian-thistle and other host plants in Hagerman-Glenns Ferry area. Host plants abundant and in vigorous condition. Apparently large numbers of beet leafhoppers will be present in endemic area during fall. (Evans).

SQUASH BUG (*Anasa tristis*) - KANSAS - Heavy, 100 or more per plant, noted on squash in Riley County; infestation did not appear until late in season. (Hall, Thompson; Sept. 20).

MELON APHID (*Aphis gossypii*) - CALIFORNIA - Heavy populations on okra plantings in Verona, Sutter County. (Cal. Coop. Rpt.).

GREEN PEACH APHID (Myzus persicae) - WASHINGTON - Averaged 3 apterae per leaf in one 5-acre field of spinach at College Place, Walla Walla County; both alatae and apterae present. (Landis).

LEAF MINER FLIES - FLORIDA - New growth of celery at Sanford, Seminole County, damaged by 7 percent infestation of Liriomyza sp. larvae. Old growth, which was 100 percent infested, dying and falling off. Crop 5 inches high and 300 plants sampled. (Desin). NEVADA - Light, spotted infestation of an undetermined species in sugar beet leaves (adults mostly emerged) noted in Lovelock area, Pershing County. (Lauderdale).

SPINACH LEAF MINER (Pegomya hyoscyami) - WASHINGTON - Spinach field borders lightly infested at College Place, Walla Walla County; more abundant than usual; eggs and larvae present. (Landis).

WIREWORMS - NORTH CAROLINA - Larvae collected from sweetpotato field in Johnston County; of 18 specimens collected one week ago, 17 Conoderus vespertinus and one C. lividus. Larvae observed feeding on sweetpotatoes left lying on top of ground and several found with heads still in sweetpotatoes. (Mount). GEORGIA - Light to moderate infestation of C. vespertinus in sweetpotatoes in Lee County (Glover, Barnes; Sept. 19); heavy infestation of undetermined wireworm in sweetpotatoes in Jasper County (Milner, Sept. 27).

MEXICAN BEAN BEETLE (Epilachna varivestis) - GEORGIA - Heavy on lima beans in Chatham County. (Vanderford, Oct. 3). ALABAMA - Adults and larvae heavy on southern peas and beans in home gardens in Macon, Lee and Barbour Counties; numerous egg masses noted. (McQueen).

A THRIPS (Leucothrips piercei) - CALIFORNIA - Medium populations on okra in Bard, Imperial County. (Cal. Coop. Rpt.).

SPIDER MITES - NEVADA - Medium infestation of undetermined species on sugar beets in Lovelock area, Pershing County. (Lauderdale). WASHINGTON - Unseasonably hot weather allowed rapid buildup of Tetranychus telarius on sugar beets at Othello, Grant County; field borders being treated. (Landis).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Infestations of migrating weevils developed above Caprock in following western counties: Briscoe, Floyd, Crosby, Dickens and Garza. (Newton).

A FLEAHOPPER (Spanogonicus albofasciatus) - ARKANSAS - Collected from cotton on September 28 in Jefferson County for a new State record. (Ark. Ins. Sur.).

COTTON LEAFWORM (Alabama argillacea) - TEXAS - Light to heavy infestations reported in Briscoe, Crosby, Dickens and Garza Counties. (Newton).

BOLLWORM (Heliothis zea) - ARIZONA - Larvae continue present in Graham, Yuma, Pinal and Maricopa Counties; very few controls being applied. (Ariz. Coop. Sur.). TEXAS - Heavy localized damage reported from Hall County. (Hoosier).

PINK BOLLWORM (Pectinophora gossypiella) - ARIZONA - One male moth caught in sex trap on October 4 located in stub cotton 2 miles west of Chandler Heights, Maricopa County; this is an eradication area. In Graham County, where eradication methods have not been conducted, larvae appearing in large numbers; many fields surveyed showed heavy degree of infestation; counts as high as 40-50 larvae per 100 bolls. (Ariz. Coop. Sur.; PPC). OKLAHOMA - Larvae continue to be found in gin trash; greatest number found in Tillman County (97 larvae in 88 bushels of trash) and in McIntosh County (89 larvae in 35 bushels of trash). None found in 50 bushels of trash examined in Harmon County and 24 bushels in Wagoner County.

Some larvae found in Beckham, Greer, Jackson, McCurtain, Muskogee, Nowata, Pittsburg and Wagoner Counties. (Okla. Coop. Sur.). ARKANSAS - Recovered from gin trash in Chicot County. This is a new county record. (Ark. Ins. Sur., PPC).

SALT-MARSH CATERPILLAR (Estigmene acrea) - ARIZONA - Remains numerous in all areas. With increase in defoliation of cotton, larvae moving in great numbers to other plants and crops. (Ariz. Coop. Sur.).

COTTON APHID (Aphis gossypii) - ARIZONA - Damaging early defoliated cotton in Yuma County. Large increases noted during past week. (Ariz. Coop. Sur.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - KANSAS - Counts of 1-2 per tip noted on Scotch pine in Saline County, central area; pupae in buds. (Thompson, Oct. 4).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - WISCONSIN - Absent in Point Beach area, Manitowoc County, where populations high during past years. (Wis. Ins. Sur.).

A PINE SHOOT MOTH (Rhyacionia pasadenana) - CALIFORNIA - Pupae heavy in buds of Monterey pines in Vallejo, Solano County. (Cal. Coop. Rpt.).

AN ENGRAVER BEETLE (Ips calligraphus) - GEORGIA - Killed 28 pine trees on 3 lots in suburban Macon, Bibb County. (Brightwell).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - OHIO - Infestations present on Colorado blue spruce in Licking County, central area. Averaged 4-5 per needle in many instances. (Walker, Oct. 3).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - OKLAHOMA - Continues to defoliate oaks throughout eastern half of State. (Okla. Coop. Sur.). KANSAS - Locally severe on oaks in Sedgwick (south central), McPherson and Saline (central) Counties. Severe defoliation noted. (Thompson, Charlton; Oct. 4, 5).

FALL CANKERWORM (Alsophila pometaria) - OKLAHOMA - Heavy on oak trees in Sequoyah (east central) and Garfield (northwest) Counties. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - OKLAHOMA - Continues active on variety of trees throughout State. (Okla. Coop. Sur.).

COTTONWOOD DAGGER MOTH (Acronicta lepusculina) - KANSAS - Locally severe on Lombardy poplar in Reno County, central. (Thompson, Sept. 30). Also reported from Cowley (southeast) and Riley (northeast) Counties. (Gates, Peters).

CATALPA SPHINX (Ceratomia catalpae) - KANSAS - Locally severe on catalpa in Riley County, northeast; larvae stripping leaves on occasional trees. (Rettenmeyer, Thompson).

SADDLED PROMINENT (Heterocampa guttivitta) - WISCONSIN - Caused light defoliation of hard maples on about 200-acre area of Door County. Larvae absent October 10. (Wis. Ins. Sur.).

MOURNING-CLOAK BUTTERFLY (Nymphalis antiopa) - KANSAS - Locally severe on American elms in Reno County. (Thompson, Sept. 30).

ELM LEAF BEETLE (Galerucella xanthomelaena) - WASHINGTON - Slightly more abundant on elms at Othello, Grant County, than for past 2 years. (Landis). UTAH - Defoliated many elms in Farmington-Layton area, Davis County, and in Roy-Ogden area, Weber County. (Knowlton). NEBRASKA - Heavy adult concentrations found in

old lumber piled out-of-doors in Nemaha County. (Bergman). KANSAS - Eggs and few larvae present on Siberian elms in Riley County (northeast) for a new county record. (Charlton, Oct. 1). Larvae and pupae present on same host in Linn and Miami Counties; also new county records. (Guldner, Oct. 4). Heavy on Siberian elms in Saline County, central area. Last brood nearly complete. Adults entering homes to hibernate. (Thompson, Oct. 4).

TWIG GIRDLER (Oncideres cingulata) - OKLAHOMA - Continues to damage elm and pecan trees at various locations throughout eastern part of State as far west as Oklahoma City and Ponca City. (Okla. Coop. Sur.).

TWIG PRUNER (Elaphidion villosum) - DELAWARE - Larvae abundant in oak twigs and causing heavy twig drop in one area of southeast Sussex County. (MacCreary).

BOXELDER BUG (Leptocoris trivittatus) - ALABAMA - Rather large numbers again feeding on silver maple in Calhoun County. (Mathews).

EUROPEAN ELM SCALE (Gossyparia spuria) - KANSAS - Severe on American elms in Saline County, central area. Nymphs migrated to bark of branches in preparation for overwintering. Some trees killed; dieback severe on others. (Thompson, Oct. 4).

LEAFHOPPERS - OKLAHOMA - Large numbers reported on elms in Oklahoma City and in McIntosh and Payne Counties. Also common in lawns throughout State. (Okla. Coop. Sur.).

WALKINGSTICK (Diapheromera femorata) - WISCONSIN - Single male observed in Door County October 10. (Wis. Ins. Sur.).

GALL WASPS - CALIFORNIA - Larvae of Andricus fullawayi, Andricus kingi, Antron clavula and Antron douglasii heavy in leaves of Quercus lobata (California white oak) in Visalia, Tulare County. Andricus confertus also heavy. Disholcaspis chrysolepidis infesting Quercus garryana (Oregon white oak) in Yreka, Siskiyou County. This is first record of this host being infested in State. (Cal. Coop. Rpt.).

SPIDER MITES - CALIFORNIA - Tetranychus willamettei infesting willows in Fair Oaks, Sacramento County. (Cal. Coop. Rpt.). UTAH - Tetranychus spp. discoloring mountain ash at Farmington and Kaysville, Davis County. Unspecified species discolored blue spruce, Pfitzer junipers, arborvitae and other evergreens in Davis County. (Knowlton, Stokes).

A JUNIPER TWIG MOTH (Periploca nigra) - CALIFORNIA - Populations heavy in juniper in Stockton, San Joaquin County. Species has been more spotty in occurrence this season than in 1962, when it caused considerable damage. (Cal. Coop. Rpt.).

SALT-MARSH CATERPILLAR (Estigmene acrea) - CALIFORNIA - Larvae medium on passion-vines (Passiflora spp.) nursery stock in Pacifica, San Mateo County. (Cal. Coop. Rpt.).

COTTON LEAFWORM (Alabama argillacea) - NEBRASKA - Larvae feeding on cotton in York County. (Roselle). Adults being taken in light traps in western area. (Bergman).

A LEAF ROLLER MOTH (Platynota stultana) - CALIFORNIA - Light on chrysanthemums in Wasco, Kern County, and heavy on ornamentals and conifer nursery stock in Visalia, Tulare County. (Cal. Coop. Rpt.).

APHIDS - CALIFORNIA - Aphis spiraecola heavy on Photinia sp. in Los Altos, Santa Clara County. Macrosiphum scoliopi medium on Easter lilies at a location in Arcata and light in McKinleyville, Humboldt County. Neothomasia populicola nymphs and adults heavy on poplar leaves in Wasco, Kern County. (Cal. Coop. Rpt.). UTAH - Pterocomma sp. numerous on willows at Murray, Salt Lake County. Drepanaphis utahensis, mostly males and egg-laying females, extremely numerous on bigtooth

maple in Blacksmith Fork Canyon, Cache County; bushes sticky. Therioaphis tiliae heavy on linden trees. (Knowlton, Hanson). MARYLAND - Aphids moderate on rose buds at University Park, Prince Georges County. (U. Md., Ent. Dept.).

HACKBERRY-NIPPLE-GALL MAKER (Pachypsylla celtidismamma) - MARYLAND - Galls abundant on hackberry at Hagerstown, Washington County. (U. Md., Ent. Dept.).

LACE BUGS (Corythucha spp.) - FLORIDA - C. cydoniae severe on leaves of Pyracantha sp. at Jacksonville, Duval County. (King, Oct. 4). C. ciliata severe on leaves of sycamore at Tampa, Hillsborough County. (Jamieson, Sept. 23).

ROSE LEAFHOPPER (Edwardsiana rosae) - UTAH - Discoloring rose foliage at Providence and Logan, Cache County. Many have moved to spirea near roses at Logan. (Knowlton, Hanson).

COCCIDS - CALIFORNIA - Saissetia hemisphaerica medium on Euonymus sp. in San Francisco, San Francisco County. Lecanium sp. ranged medium to heavy on coleus plants in Galt, Sacramento County. (Cal. Coop. Rpt.). ALABAMA - Fiorinia theae heavy on isolated Burford hollies used as ornamental base plantings at rural homes in Macon and Lee Counties. (McQueen). FLORIDA - Pinnaspis strachani infesting palm leaves at Orlando, Orange County. (Crews). NORTH CAROLINA - An undetermined mealybug infesting begonia in a Hertford County greenhouse. (Langdon, Mount). Chrysomphalus tenebricosus noted on maple at a Wake County location. (Spell, Mount). MARYLAND - Unaspis euonymi infesting euonymus at Ellicott City, Howard County. Coccus hesperidum heavy on English ivy at Trappe, Talbot County. (U. Md., Ent. Dept.).

AN ERIOPHYID MITE (Eriophyes loewi) - WASHINGTON - Possibly this species, seriously bronzing lilac foliage at Pullman, Whitman County. (Telford).

AN ACARID MITE (Tyrophagus sp.) - FLORIDA - Severe on wedelia at Tampa, Hillsborough County. (Hale, Sept. 27).

INSECTS AFFECTING MAN AND ANIMALS

A CALLIPHORID FLY (Cochliomyia sp.) - MISSISSIPPI - Larvae collected from cattle in Forrest County during July do not completely agree with C. hominivorax, although they are close. May be natural hybrids with C. macellaria, or some aberration in development or mutation. Det. by C. W. Sabrosky. (Ouzts).

HORN FLY (Haematobia irritans) - UTAH - Continues annoying to cattle in Farmington-Layton area, Davis County, and in southern Weber County. (Knowlton). OKLAHOMA - Populations unchanged in Stillwater area, Payne County (north central). Ranged 600-800 per head on cattle in McIntosh County (east central); moderate infestations reported in Mayes (east central) and Cleveland (central) Counties. (Okla. Coop. Sur.). GEORGIA - Averaged 100 per animal on beef cows in Burke County; averaged 8 per animal on treated beef cows in Pike County, and 5 per treated beef cow in Spalding County. Averaged 114 per untreated animal in Spalding County. (Roberts, Oct. 2).

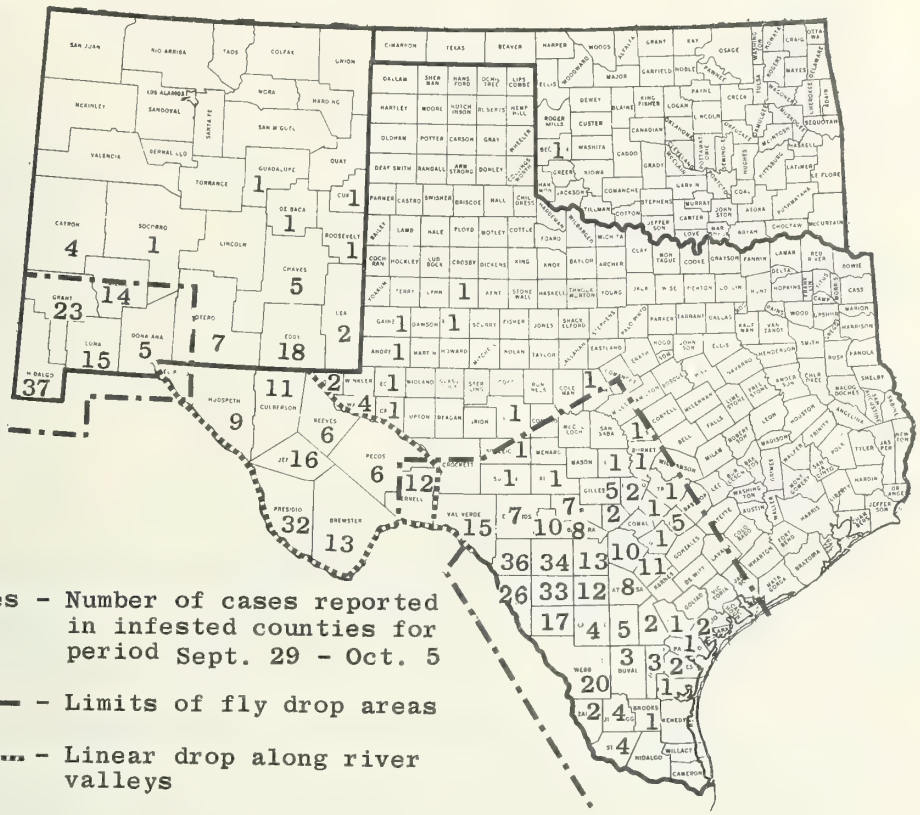
A DEER FLY (Chrysops atlanticus) - DELAWARE - Adults annoying in an eastern area of Kent County. (Lake, Murphey).

HORSE BOT FLY (Gasterophilus intestinalis) - CALIFORNIA - Heavy on legs of horses in Florin, Sacramento County. (Cal. Coop. Rpt.).

MOSQUITOES - UTAH - Continue a problem in many parts of State. (Fronk, Knowlton). Troublesome in Fielding-Brigham City-Perry area, Box Elder County. (Knowlton). NEBRASKA - Quite troublesome in Franklin and Kearney County areas. (Roselle). MINNESOTA - Hatching continues and unspecified species have been nuisance in some areas. (Minn. Ins. Rpt.).

STATUS OF THE SCREW-WORM (Cochliomyia hominivorax) IN THE SOUTHWEST

During the period September 29 - October 5, a total of 430 infestations was reported from TEXAS; 135 from NEW MEXICO; and 1 from OKLAHOMA. Specimens were reported from 61 counties in Texas, 15 counties in New Mexico and one county in Oklahoma. There were 3 cases of unknown origin in Texas. This reporting period reflects the highest incidence of screw-worm found during any 7-day period this calender year. The majority of cases in Texas are being found in and near the overwintering area of a relatively mild winter. Slightly less than 118,000,000 flies were released during this period. Production continues to rise and it is expected that within next few weeks, flies will again be released at the 138,000,000 level. (Anim. Dis. Erad. Div.).



HOUSE FLY (Musca domestica) - OKLAHOMA - Continues annoying around homes and public buildings. (Okla. Coop. Sur.). COLORADO - Populations continue high and very annoying to man and animals. (Hantsbarger).

BLACK FLIES - WISCONSIN - Prevalent and biting in western Dane County on October 9. (Wis. Ins. Sur.).

FLEAS (Ctenocephalides spp.) - OKLAHOMA - Continue annoying in some homes in Stillwater area, Payne County. (Okal. Coop. Sur.).

PUSS CATERPILLAR (Megalopyge opercularis) - NORTH CAROLINA - Causing some concern in Pasquotank County. (Lowery, Mount).

VESPID WASPS - UTAH - Yellow jackets and bald-faced hornets annoying to campers in Blacksmith Fork Canyon, Cache County. (Knowlton, Hanson). WISCONSIN -

Polistes spp. prevalent in Black River Falls area, Jackson County, October 5, but not stinging despite molestation and warm temperatures. (Wis. Ins. Sur.).

AN EPIDERMOPTID MITE (Dermatophagoides sp.) - CALIFORNIA - Heavy on humans and clothing in Santa Maria, Santa Barbara County. (Aldermann Pest Control).

HOUSEHOLD AND STRUCTURAL INSECTS

BOXELDER BUG (Leptocoris trivittatus) - UTAH - Invading homes and schoolrooms in several northern localities. (Knowlton). MINNESOTA - Causing concern to few homeowners by collecting in sunny locations. (Minn. Ins. Rpt.). OHIO - Heavy numbers moving into home at Shreve, Wayne County, northeast. (White). Several requests for control received in Franklin County, central area. (Jones). Noted near Urbana, Champaign County, west central. (Lyon). MARYLAND - Annoying homeowners at several localities in Washington County. (U. Md., Ent. Dept.). NORTH CAROLINA - Problem in a home in Gaston County. (Mount).

CIGARETTE BEETLE (Lasioderma serricorne) - ALABAMA - Reported by several residents in Lee County as infesting cornmeal, grits and dried fruit. (McQueen). GEORGIA - Heavy in cereals in homes in Macon, Bibb County. (Johnson). MARYLAND - Adults abundant in home at Hyattsville, Prince Georges County. (U. Md., Ent. Dept.).

A WEEVIL (Trachyphloeus bifoveolatus) - WASHINGTON - Infesting homes in Cooke, Skamania County. This is a new county record. (Adlard, Brannon).

AN EARWIG (probably Labidura riparia) - GEORGIA - Moderate to heavy infestations in homes in Dublin, Laurens County, and in Waynesboro, Burke County. (Stamey, Fortson; Oct. 4).

STORED-PRODUCT INSECTS

Stored-product Insects in Florida - CIGARETTE BEETLE (Lasioderma serricorne) ranged light to heavy in stored grain at Sanford, Seminole County (Desin, Sept. 24); infested wheat at Winston, Polk County (Risk, Dunham; Sept. 26) and ground feed on floor at Gainesville, Alachua County (Adkins, Oct. 4). SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) ranged light to heavy in stored grain at Sanford, Seminole County. (Desin, Sept. 24).

Stored-product Insects in Wyoming - Inspection of 28 granaries in Fremont, Washakie and Big Horn Counties showed the following species present: SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) adults very light to moderate in 25 granaries; RED FLOUR BEETLE (Tribolium castaneum) adults light and active in 19 granaries; CONFUSED FLOUR BEETLE (T. confusum) adults active and very light in 12 granaries; CADELLE (Tenebroides mauritanicus) adults active and very light in 10 granaries; MEAL MOTH (Pyralis farinalis) larvae present in 2 granaries. (Marks).

RUSTY GRAIN BEETLE (Cryptolestes ferrugineus) - OHIO - Noted at Steubenville, Jefferson County, east central. (Knight, Holdsworth).

BENEFICIAL INSECTS

FLOWER BUGS (Orius spp.) - UTAH - O. tristicolor moderately numerous in flowers of rabbitbrush heavily infested with thrips in northern localities. (Knowlton). WISCONSIN - O. insidiosus averaged 2 per sweep in alfalfa in western Dane County. Also prevalent and annoying in Madison area October 5. (Wis. Ins. Sur.).

DAMSEL BUGS (Nabis spp.) - NEVADA - Heavy in all alfalfa fields in Lovelock, Pershing County. (Lauderdale).

MISCELLANEOUS INSECTS

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - FLORIDA.- Moderate in grove at Duette, Manatee County. Det. by W. Breidenbach. (Holden, Sept. 24).

A LEAF TIER (Udea profundalis) - CALIFORNIA - Adults heavy on grass under oak trees in Tudor, Sutter County. (Cal. Coop. Rpt.).

CUTWORMS - COLORADO - Total of 53 Agrotis orthogonia and 16 Feltia subgothica collected in light trap at Rocky Ford during period October 1-7. (Schweissing).

A SNAIL (Oxychilus cellarius) - CALIFORNIA - Heavy in dichondra lawn in Carlsbad, San Diego County. (Cal. Coop. Rpt.).

INTERCEPTIONS

A SNAIL (Helicella maritima) - OHIO - One live and 2 dead specimens found aboard ship from Taranto, Italy, on general cargo; no infestation found on vessel, SS Exiria. (Fryer, Sept. 16).

KHAPRA BEETLE (Trogoderma granarium) - OHIO - One cast skin found on bag of rice in dry storeroom during initial inspection of SS Bintang at Ashtabula on September 19; one live larva later found on rice in same location during follow-up inspection at Cleveland on September 22. Vessel authorized movement with storeroom under seal. (Fryer).

CORRECTIONS

CEIR 13(41):1218 - EARWIGS - ARIZONA - Forficula sp. should read Labidura riparia.

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, on July 31, 1963, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month, but do include any of special interest from recent months that were not previously reported.

CITRUS BLACKFLY (Aleurocanthus woglumi Ashby) in baggage at Laredo, Texas.

A WEEVIL (Apion sp., probably carduorum Kby.) (a pest of artichoke in the Mediterranean area) twice in stores at Baltimore, Maryland, and Philadelphia, Pennsylvania.

LIGHT-BROWN APPLE MOTH (Austrotortrix postvittana (Wlk.)) (or related tortricid species) in apple cargo after treatment; 3 times at Honolulu, Hawaii; 2 times at Charleston, South Carolina; and 2 times at Seattle, Washington.

PEACH FRUIT MOTH (Carposina niponensis Wlsm.) in apples in quarters at Corpus Christi, Texas.

MEDITERRANEAN FRUIT FLY (Ceratitis capitata (Wied.)) 7 times; once in stores and 6 times in baggage; 1 time at Wilmington, North Carolina; 3 times at San Francisco and once at San Diego, California; and twice at New York International Airport, New York.

MELON FLY (Dacus cucurbitae Coq.) (or probably that species) twice in stores at San Diego, California.

ORIENTAL FRUIT MOTH (Dacus dorsalis Hend.) in baggage at San Francisco, California.

A WEEVIL (Epicaerus sp., probably cognatus Sharp) in baggage at Calexico, California.

A STINK BUG (Eurydema ornata (L.)) (an economic pest of crucifers throughout the Palearctic Region) with cargo (between layers of wood in roll of cable) at Dover, Delaware.

A PYRAUSTID MOTH (Evergestis forficalis (L.)) (an economic species on crucifers, celery, beets and other hosts in parts of Europe, U.S.S.R., Japan) in stores at Houston, Texas.

SUGAR-BEET CROWN BORER (Gnorimoschema ocellatella (Boyd)) (pest of beets in Mediterranean area) 3 times in stores; twice at Philadelphia, Pennsylvania, and once at New York, New York.

A NOCTUID MOTH (Gortyna flavago (Schiff.)) (an important pest of artichoke in Mediterranean region) in stores at Baltimore, Maryland.

LARGE WHITE BUTTERFLY (Pieris brassicae (L.)) (a widespread crucifer pest in the Old World) pupae adhering to wooden boxes in cargo at New Orleans, Louisiana.

AN ANDEAN POTATO WEEVIL (Premnotrypes sp.) in stores at Baltimore, Maryland; New Orleans, Louisiana; and Mobile, Alabama.

EUROPEAN CHERRY FRUIT FLY (Rhagoletis cerasi (L.)) 16 times; 6 times in stores, 1 time in quarters and 9 times in baggage; 1 time at San Pedro, California, and 15 times at New York International Airport, New York.

A TORTRICID MOTH (Tortrix excessana (Wlk.)) (a needle-tying species) in apple cargo at Honolulu, Hawaii.

KHAPRA BEETLE (Trogoderma granarium Everts) (or probably that species) 25 times in stores, ship's hold and contaminating cargoes of woolen carpets, guar gum, gum karaya, gum arabic, cotton piece goods, cotton waste and rubber; 15 times at New York, New York; 1 time at Houston, Texas; 2 times at San Pedro, California; 1 time at Philadelphia, Pennsylvania; 4 times at Charleston, South Carolina; and 2 times at Cleveland, Ohio.

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Weather of the week ending October 14 (continued from page 1236)
Gulf and Atlantic coast from Mobile, Alabama, to Nantucket, Massachusetts, and over northeastern New England. Elsewhere over the country, temperatures averaged above normal. Due to the high afternoon temperatures on several days, temperatures over the middle and northern Great Plains averaged 8° to 10° above normal. At the end of the week, the long Indian summer continued with clear skies, abundant sunshine, warm days, cool nights, low humidity, and no important rain over most of the Nation. (Summary supplied by U.S. Weather Bureau).

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation	Type of trap *	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	Heliothis zea (bollworm, corn earworm)	Laphygma frugiperda (fall armyworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (beet webworm)	Loxostege sticticalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquemaculata (tomato hornworm)	Protoparce sexta (tobacco hornworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Trichoplusia ni (cabbage looper)	Major crop **
ARKANSAS																								
Kelso 10/3-9				1						71														
CALIFORNIA																								
Davis 10/5-11				35				250												55	45			Misc.
COLORADO																								
Rocky Ford 10/1-7				13						160										34				
FLORIDA																								
Gainesville 10/8			BL	3				1									1			9				
GEORGIA																								
Tifton 9/26-10/2			BL						9	19									1					
Tifton 10/3-9			BL						1	15								1						
KANSAS																								
Garden City 9/25,27,30, 10/2,4,7				14		75	7			280						10	19			54				
Hays 9/17,10/1 3,5				6		51	6			127						3	11			9				
Manhattan 9/28,10/5,8,11				18			7			207						4	41			34				
Mound Valley 9/26,10/1,3,7				8			2			91							6			8				
MISSISSIPPI																								
Stoneville 10/4-10	51-92	-	MV	14		8		94	23	785	52					4	97		2	27	463	212		
Stoneville 10/4-10	51-92	-	BL	47		12		129	26	1716	114					8	252			89	1052	204		
NEBRASKA																								
Bushnell 10/1-5				7		92				2										10				
Bushnell 9/24-30				23		635				51						8				35				
Kearney 10/5-8				10		19				51	19					1				6				
North Platte 10/2-8				430		1147			1	506	204				1	48	16			455				
Ogallala 9/29-10/7				3		66				7						1				2				
Scotts Bluff Expt. Sta. 9/25-10/1				18		70				6						9		1		7				
NORTH DAKOTA																								
Fargo 10/5-11				4		1				1										12		4		
SOUTH CAROLINA																								
Clemson 9/27-10/4				4				1	1	9	18					2	10			1				
Charleston 10/7-13	46-86	0.24	BL	15				8	1	49	3					3	12	1		58		3		

(Continued on page 1252).

* BL = blacklight; I = incandescent; MV = mercury vapor ; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. - legumes (unspecified); lett. = lettuce; pean. peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation	Type of trap *	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	Heliothis zea (bollworm, corn earworm)	Laphygma frugiperda (fall armyworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege sticticalis (garden webworm)	Loxostege similalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquemaculata (tomato hornworm)	Protoparce sexta (tobacco hornworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Trichoplusia ni (cabbage looper)	Major crop **
TENNESSEE (counties)																								
Maury 9/17-23				66						32	1					2	26	9	15	75				
Maury 9/24-30										79	312					6	13	11	2					
Robertson 9/17-23				34						36	5						17	2	5	66				
Robertson 9/24-30										44	320					1	10	2	14					
Cumberland 9/17-23				56						26	2					3	13	1	3	47				
Cumberland 9/24-30				2						56	288						1	2	16	2				
Blount 9/24-30										68	270						12		9					
Johnson 9/17-23										4	21						12			29				
Johnson 9/24-30				4						4	126						4		32	16				
Greene 9/17-23				16						27	1						9	1	2	68				
Greene 9/24-30				17						76	304						3	1	11	1				
TEXAS																								
Waco 10/5-11			BL	3					51	15	301	1				60	72			31	12	40		
WISCONSIN																								
Middleton 10/1-7			BL	61							38					19				25				
Madison 10/1-7			BL	58							81					22				34				
Mazomanie 10/1-6			BL	28							45				1	7				14				
De Forest 10/1-7			BL	4							6				1	2				4				

* BL = blacklight; I = incandescent; MV = mercury vapor ; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

1962 WISCONSIN INSECT LOSS ESTIMATES*

Prepared by Division of Plant Industry
Wisconsin Department of Agriculture

Crop	Acres Planted	Acres Treated	Yield Untreated Acreage (See legend for units)	Yield Treated Acreage	Percent Reduction	Total Cost ($) Treatment	Loss from Untreated Acreage ($)	Gain or Loss from Treatment ($)	Principal Pests
Corn (grain)	1,500,000	700,000 sd.t. 210,000 s & f	36,285,000 bu.	60,515,000 bu.	4	$1,820,000	$3,127,000	$3,003,000	Soil insects, European corn borer
Corn (ensilage)	1,035,000	---	---	---	--	---	---	---	---
Corn (sweet)	107,400	21,165	294,924 t.	80,004 t	5	68,786	**546,374	65,320	European corn borer, corn earworm
Oats	2,336,000	10,000	129,093,000 bu.	565,000 bu.	trace	12,500	1,511,900	-6,000	Armyworm, greenbug
Hay	3,914,000	50,000	9,698,640 t.	125,500 t	3	100,000	5,564,160	-28,000	All insects
Soybeans	101,000	---	1,767,500 bu.	---	trace	---	11,362	---	All insects
Peas	112,300	21,689	195,719,760 lb.	65,534,560 lb.	15	75,911	3,030,032	649,369	Pea aphid
Tobacco	12,000	5,000	11,116,000 lb.	8,260,000 lb.	2	40,000	132,160	54,400	Soil insects, cutworms
Potatoes	50,000	50,000	---	10,550,000 cwt.	65	750,000	---	10,963,500	Potato leafhopper
Cabbage	5,900	5,900	---	1,770,000 cwt.	95	70,800	---	1,425,735	Aphids, loopers, cabbage maggot
Cucumber	14,200	2,160	30,100 t.	5,400 t.	trace	6,480	15,652	-3,672	Cucumber beetles
Snap beans	27,900	3,647	48,506 t.	7,294 t.	20	10,941	678,114	91,029	Leafhoppers
Lima beans	5,700	3,351	4,134,240 lb.	8,846,640 lb.	20	10,053	115,759	155,084	Leafhoppers

1962 Wisconsin Insect Loss Estimates (continued)

Crop	Acres Planted	Acres Treated	Yield Untreated Acreage (See legend for units)	Yield Treated Acreage	Percent Reduction	Total Cost ($) Treatment	Loss from Untreated Acreage ($)	Gain or Loss from Treatment ($)	Principal Pests
Carrots	2,100	849	425,340 cwt.	288,660 cwt.	2	7,641	10,683	3,817	Six-spotted leafhopper
Lettuce	3,000	3,000	---	435,000 cwt.	10	27,000	---	193,100	Six-spotted leafhopper
Beets	7,900	370	71,535 t.	3,515 t.	trace	1,110	10,843	-45	Leaf miners
Mint	4,300	700	151,200 lb.	29,400 lb.	trace	1,750	9,360	1,890	Loopers
Onions	2,200	2,200	---	572,000 cwt.	25	17,600	---	397,100	Onion maggot, onion thrips
Apples	10,000	10,000	---	1,400,000 bu.	90	1,100,000	---	790,000	Codling moth, apple maggot
Cherries	8,500	8,500	---	13,500 t.	85	680,000	---	466,000	Apple maggot
Cranberries	5,168	4,500	69,205 bbl.	466,200 bbl.	1	22,500	5,611	15,300	Cranberry fruitworm, black-headed fireworm
Strawberries	2,000	1,300	2,172,800 lb.	4,160,000 lb.	* 3	58,500	16,223	12,606	Strawberry leaf roller, meadow spittlebug

* Acreage and yield values derived from Crop Reporting Service data; Acreage treatment courtesy of University of Wisconsin Extension Service and Wisconsin Canner's Association. Yield based on current 1962 data, prices on 1961 data.

** Actual value unobtainable due to inability to evaluate loss in time necessitated by trimming.

Legend:
t. = ton
cwt. = hundredweight
bbl. = barrel
lb. = pound
bu. = bushel

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Grain sorghum (Commodity) IN Texas (State or District) DURING 1962 (Year)

A.	Pest or pest complex Sorghum midge, corn earworm, sorghum webworm	
B.	Number of acres[a] produced (From CRS)	No. 5,052,000
C.	Average yield per acre[a] (From CRS)	Units/ 40 bu.
D.	Price[b] per unit (bu.)[c] (From CRS)	$/ 0.85*
E.	Acres[a] needing control	No. 3,000,000
F.	Acres[a] treated	No. 1,000,000
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 30
	I. Loss in yield, units per acre[a], C x H	Units/ 12 bu.
	J. Loss in yield, $ per acre[a], D x I	$/ 10.20
	K. Loss in quality, $ per [a]	$/ negligible
L.	Yield loss for all acres[a], (E-F) x I	Units 24,000,000 bu.
M.	Control cost, $ per acres[a]	$/ 1.50
N.	Control cost for all acres[a], F x M	$ 1,500,000
O.	Yield loss for all acres[a], (E-F) x J	$ 20,400,000
P.	Quality loss for all [a], (E-F) x K	$ negligible
Q.	Combined control cost and losses, N + O + P	$ 21,900,000

Comment: Seed treatment data not included. Estimate of total losses is probably conservatively low--sorghum midge destroyed up to 100% of sorghum grain in late planted fields in the Panhandle area. Also, considerable acreage was improperly treated resulting in additional costs with no yield increase.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

*Estimated average

Submitted by Weldon H. Newton

Date 4-3-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Wheat (Commodity) IN Texas (State or District) DURING 1962 (Harves (Year)

A.	Pest or pest complex Fall armyworm, army cutworm, greenbug, winter grain mite		
B.	Number of acres[a] produced (From CRS)	No.	2,731,000
C.	Average yield per acre[a] (From CRS)	Units/	16 bu.
D.	Price[b] per unit (bu.)[c] (From CRS)	$/	1.50*
E.	Acres[a] needing control	No.	270,000
F.	Acres[a] treated	No.	130,000
G.	Reduction due to not treating where needed:		
	H. Loss in yield, percent	%	8
	I. Loss in yield, units per acre[a], C x H	Units/	1.28 bu.
	J. Loss in yield, $ per acre[a], D x I	$/	1.92
	K. Loss in quality, $ per acre[a]	$/	negligible
L.	Yield loss for all acres[a], (E-F) x I	Units	179,200 bu.
M.	Control cost, $ per acre[a]	$/	1.00
N.	Control cost for all acres[a], F x M	$	130,000
O.	Yield loss for all acres[a], (E-F) x J	$	268,800
P.	Quality loss for all acres[a], (E-F) x K	$	negligible
Q.	Combined control cost and losses, N + O + P	$	398,800

Comment: Yields were considerably below the average of 23.0 bushels in 1961 due to unfavorably dry weather during the spring of 1962. Insects were of minor consequence only.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

*Estimated average

Submitted by Weldon H. Newton

Date 4-3-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cotton (Commodity) IN Texas (State or District) DURING 1962 (Year)

A.	Pest or pest complex	Bollworm, boll weevil, tobacco budworm, fleahoppers, thrips, cabbage looper, spider mites, lygus bugs, pink bollworm, beet aryworm
B.	Number of acres [a] produced (From CRS)	No. 6,580,000
C.	Average yield per acre [a] (From CRS)	Units/ 343 lbs. lint
D.	Price[b] per unit (lb.)[c] (From CRS)	$/ .30*
E.	Acres [a] needing control	No. 4,935,000
F.	Acres [a] treated	No. 3,950,000
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 25
	I. Loss in yield, units per acre [a], C x H	Units/ 85.75 lbs.
	J. Loss in yield, $ per acre [a], D x I	$/ 25.73
	K. Loss in quality, $ per acre [a]	$/ 1.00
L.	Yield loss for all acres [a], (E-F) x I	Units 84,463,750 lbs.
M.	Control cost, $ per acre [a]	$/ 10
N.	Control cost for all acres [a], F x M	$ 39,500,000
O.	Yield loss for all acres [a], (E-F) x J	$ 25,344,050
P.	Quality loss for all acres [a], (E-F) x K	$ 985,000
Q.	Combined control cost and losses, N + O + P	$ 65,829,050

Comment: These figures do not reflect losses due to diseases, and in many instances losses due to a combination of insects and diseases are impossible to separate.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

*Estimated average

Submitted by Weldon H. Newton

Date 4-3-63

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